

# Fariba Fahroo

## List of Publications

### Refereed Chapters in Books

1. F. Fahroo, and K. Ito, *Variational formulation of optimum damping designs*, *Optimization Methods in PDEs*, in the Contemporary Mathematics Series by the American Mathematical Society, Vol. 209, 1997, pp. 95-115.
2. F. Fahroo, and C. Wang, *Stability and approximation of an acoustic-structure model* *Control of Distributed Parameter and Stochastic Systems*, Kluwer Academic Publishers, MA, USA 1999, pp.39-47.

### Refereed Journal Publications

3. H. T., Banks and F. Fahroo, *Legendre-Tau approximations for LQR feedback control of acoustic pressure fields*, *Journal of Mathematical Systems, Estimation, and Control*, Vol. 5, No. 2, Summary pp. 271-274, full electronic paper, 34 pp, April 1995.
4. F. Fahroo and K. Ito, *Optimum damping design for an abstract wave equation*, *Kybernetika*, Vol. 32, No. 6, 1996, pp. 557-574.
5. F. Fahroo and C. Wang, *Numerical experiments on approximated acoustic-structure systems*, the *Journal of Mathematical Systems, Estimation, and Control*, Vol. 8, No. 2, Summary pp. 197-200, 14 pp, Feb 1998.
6. F. Fahroo, *Optimal placement of controls for a one-dimensional active noise control problem*, *Kybernetika*, Vol. 34, No. 6, 1998, pp. 655-665.
7. F. Fahroo and C. Wang, *A new model for acoustic-structure interaction and its exponential stability*, the *Quarterly of Applied Mathematics*, Vol. LVII, No. 1, 1999, pp. 157-179.
8. F. Fahroo and M. Demetriou, *Optimal actuator/sensor location for active noise regulator and tracking control problems*, the *Journal of Computational and Applied Mathematics*, Vol. 114, No. 1, 2000, pp. 137-158.

9. Y. Kanayama and F. Fahroo, *A new continuous-curvature line/path tracking method for car-like vehicles*, the Journal of Advanced Robotics, Vol. 13, No. 7, 2000, pp. 663-690.
10. F. Fahroo and I. M. Ross, *A spectral patching method for direct trajectory optimization*, the Journal of the Astronautical Sciences, Vol. 48, No. 2/3, April-September 2000, pp. 269-286.
11. F. Fahroo and I.M. Ross, *A second look at approximating differential inclusions*, Journal of Guidance, Control and Dynamics, Vol. 24, No. 1, 2001, pp. 131-133.
12. F. Fahroo and I. M. Ross, *Costate estimation by a Legendre pseudospectral method*, Journal of Guidance, Control and Dynamics, Vol. 24, No. 2, 2001, pp. 270-277.
13. F. Fahroo and I. M. Ross, *Direct trajectory optimization by a Chebyshev pseudospectral method*, Journal of Guidance, Control and Dynamics, Vol. 25, No. 1, 2002, pp. 160-166.
14. I. M. Ross, H. Yan, and F. Fahroo, *Optimal feedback control laws by pseudospectral approximations*, submitted to the International Journal of Control, July 2001.

### Refereed Conference Proceedings

1. F. Fahroo and K. Ito, *Optimum damping design for an abstract wave equation*, the Proc. of the 3rd IEEE Mediterranean Symposium on New Directions in Control and Automation, Cyprus, Vol. 2, 1995, pp. 210-216.
2. F. Fahroo, *Optimal location of controls for an acoustic problem*, the Proc. IEEE Conf. on Decision and Control, New Orleans, Vol. 4, 1995, pp. 3765-3766.
3. F. Fahroo, *Exponential stability of polynomial Galerkin methods for an acoustic-structure model*, the Proc. of the 4th IEEE Mediterranean Symposium on New Directions in Control and Automation, Crete, Greece, June 1996.

4. Y. Kanayama and F. Fahroo, *A new line tracking method for nonholonomic vehicles*, the Proc. of the ICRA Conference, Albuquerque, New Mexico, April 1997, pp. 2908-2913.
5. F. Fahroo, *Optimal location of actuators for an active noise control problem*, the Proc. of the 5th IEEE Mediterranean Symposium on New Directions in Control and Automation, Cyprus, July 1997.
6. Y. Kanayama and F. Fahroo, *A circle tracking method for nonholonomic vehicles*, the Proc. of SYROCO 97 Conference on Robot Control, Nantes, France, September 1997, pp. 551-558.
7. F. Fahroo and Y. Wang, *Optimal location of piezoceramic actuators for vibration suppression of a flexible structure*, the Proc. of IEEE Conference on Decision and Control, San Diego, December 1997.
8. K. Jensen, F. Fahroo, and I.M. Ross, *Application of optimal periodic control theory to the orbit reboost problem*, the Proc. of the AAS/AIAA Space Flight Mechanics Meeting, Feb 1998, in the Advances in the Astronomical Sciences Series, Paper 98-166.
9. F. Fahroo and I. M. Ross, *Costate estimation by a Legendre pseudospectral method*, the proceedings of the 1998 AIAA GNC conference, in Boston, MA, August 1998, Paper 98-4222.
10. F. Fahroo and I. M. Ross, *Computational optimal control by spectral collocation with differential inclusion*, the proceedings of Flight Mechanics Symposium, at Goddard Space Flight Center, May 1999, pp. 185-200.
11. F. Fahroo and M. Demetriou, *Optimal location of sensors and actuators for an active noise control problem*, the proceedings of the American Control Conference, San Diego, June 1999, pp. 1717-1721.
12. F. Fahroo and M. Demetriou, *Optimal location of actuators for control of a 2-D structural acoustic model*, proceedings of the Conference on Decision and Control, Phoenix, December 1999, pp. 4290-4295.
13. H. Yan, F. Fahroo and I. M. Ross, *Accuracy and optimality of direct transcription methods*, the proceedings of the AAS/AIAA Space Flight Meeting, in Clearwater, FL, January 2000, Paper AAS 00-205.

14. F. Fahroo and I. M. Ross, *A spectral patching method for direct trajectory optimization*, The Richard H. Battin Astrodynamics Symposium, College Station, TX, 20-21 March 2000, Paper AAS 00-260.
15. F. Fahroo and I. M. Ross, *Direct trajectory optimization by a Chebyshev pseudospectral method*, the proceedings of the American Control Conference , Chicago, IL, June 2000, pp. 3860-3864.
16. F. Fahroo and I. M. Ross, *Trajectory optimization by indirect spectral collocation methods*, the proceedings of the AIAA 2000 Meeting, in Denver, CO, August 2000, pp. 123-129.
17. H. Yan, F. Fahroo and I. M. Ross, *Optimal feedback control laws by Legendre pseudospectral approximations*, the proceedings of the American Control Conference 2001, Arlington, VA, June 2001, pp.
18. I. M. Ross, H. Yan and F. Fahroo, *A curiously outlandish problem in orbital mechanics*, the ASS/AIAA Astrodynamics Specialist Conference, in Quebec City, Quebec, Canada, July 30-August 22, 2001, Paper AAS 01-430.
19. I. M. Ross and F. Fahroo, *A pseudospectral transformation of the covectors of optimal control systems*, the proceedings of the 1st IFAC/IEEE Symposium on System Structure and Control, Prague, the Czech Republic, August 2001.
20. I. M. Ross and F. Fahroo, *Convergence of pseudospectral discretizations of optimal control problems*, the proceedings of the 40th Conference on Decision and Control, Orlando, FL, December 2001.
21. I. M. Ross and F. Fahroo, *A direct method for solving nonsmooth optimal control problems*, to appear in the proceedings of the 2002 IFAC World Conference, Barcelona, Spain, July 2002.
22. H. Yan, F. Fahroo, and I. M. Ross, *Real-time computation of neighboring optimal guidance*, submitted to the AIAA Guidance, Navigation and Control Conference, Monterey, CA August 5-8, 2002.
23. I. M. Ross, J. T. King, and F. Fahroo, *Designing optimal spacecraft formations*, submitted to the AIAA/AAS Astrodynamics Conference, Monterey, CA August 5-8, 2002.

- 24. J. Strizzi, I. M. Ross, and F. Fahroo, *Towards real-time computation of optimal controls for nonlinear systems*, submitted to the AIAA Guidance, Navigation and Control Conference, Monterey, CA August 5-8, 2002.
- 25. I. M. Ross and F. Fahroo, *A perspective on methods for trajectory optimization*, submitted to the AIAA/AAS Astrodynamics Conference, Monterey, CA August 5-8, 2002.